

EXHIBIT OO

Expert Report of Michael H. Berman
Opinions Regarding Property Located at 34 Woodridge Lane in the
Village of Sea Cliff, Nassau County, New York

Relating to:
Saeid E. Jalayer, Jinous Atai, Negin Jalayer, and Saam Jalayer vs.
Josephine Stigliano, Exx., Long Island Lighting Company d/b/a LIPA,
and North Shore Cesspool Cleaning Company, Inc.

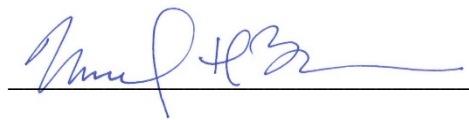
2:10-cv-02285-JFB-AKT
U.S. District Court for the
Eastern District of New York

Prepared by

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engineers | scientists | innovators

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1. INTRODUCTION

1.1 Summary of Engagement

Geosyntec Consultants (Geosyntec) has been engaged by Schiff Hardin LLP (Schiff) and its client, Long Island Lighting Company d/b/a LIPA (LILCO), related to this matter, Saeid E. Jalayer, Jinous Atai, Negin Jalayer, and Saam Jalayer (Plaintiffs) vs. Josephine Stigliano (as Executrix of the Estate of Anthony G. Stigliano), Long Island Lighting Company d/b/a LIPA, and North Shore Cesspool Cleaning Company, Inc. (Case No. 2:10-cv-02285-JFB-AKT E.D. NY) (this Matter). Through Geosyntec's engagement, I, Michael Berman, P.E.,¹ CHMM, have been retained as an expert in environmental due diligence and environmental site strategy to provide my judgment, advice, and opinions relative to the facts of this Matter. Specifically, I have been asked to review and assess relevant documents produced in this case or otherwise publicly-available and to provide my opinions related to the appropriateness of environmental due diligence conducted and appropriateness of a remedial approach for the property located at 34 Woodridge Lane in the Village of Sea Cliff, Nassau County, New York (the Site or Property).²

1.2 Qualifications and Compensation

I prepared this report with the support of a Geosyntec project team under my direction. Geosyntec is a specialized consulting and engineering firm that works with private and public-sector clients to address new ventures and complex problems involving our environment, natural resources, and civil infrastructure. We have a staff of more than 1,000 engineers, scientists, and related technical and project support personnel serving clients from more than 50 offices throughout the U.S., and locations in Australia, Canada, Ireland, and the United Kingdom.

I have more than 24 years of experience in assessing the nature, extent, and cost of environmental contamination of soil, sediment, groundwater, surface water, and air, and in developing remedial scenarios, designs, and cost analyses for contaminated sites. These have included a wide-variety of industrial manufacturing, mining, pulp and paper, wood treatment, petroleum and petrochemical, electric utility, railroad, and industrial manufacturing sites being addressed under the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and other state led and voluntary cleanup regulatory frameworks. I have direct experience conducting and managing investigations and remedial actions to address chlorinated solvents, petroleum hydrocarbons, perchlorate, and various

¹ Registered Professional Engineer in Maryland, Virginia, and the District of Columbia.

² For the purpose of my opinion, I define the property to mean the entirety of the former Stigliano property inclusive of what is currently known as Block 21, Lots 38, 81, 148, 149, and 150 in the land records of Nassau County.

inorganic contaminants in soil, groundwater, and surface water at sites engaged under various federal and state cleanup programs.

I have assessed environmental conditions and the scope and cost of potential remedial scenario for thousands of sites across the U.S. and in Canada, Latin America, and Europe, including sites in New York and on Long Island. In the 1990s, I worked as an environmental consultant in Locust Valley, approximately 4 miles from the Site. Through my past work supporting the U.S. Environmental Protection Agency (EPA), I have co-authored national guidance documents on the topics of remediation cost estimation and site remediation. I am often asked to speak to client teams or industry groups regarding environmental site assessment and environmental liability assessment and I have been engaged as a consulting and testifying expert on this subject.

My current resume, which describes my relevant project experience and publication history is included as Attachment 1. I have not testified in deposition or trial in the past four years. My compensation for this Matter is \$285 per hour with no billing rate premium for testimony.

1.3 Summary of Opinions

I have been asked to review and assess relevant documents and to provide my opinions related to the appropriateness of environmental due diligence conducted and the appropriateness of a remedial approach for the Site. In conducting my analysis and developing these opinions, I have relied upon documents provided by Schiff, other publicly-available documentation obtained by Geosyntec, and my and Geosyntec's experience conducting environmental due diligence and assessment at other sites. The documents that I have relied upon are listed in Attachment 2.

The opinions expressed herein are based on the body of documents that I have reviewed to date. If additional information is received prior to deposition or trial, I reserve the right to supplement the facts and conclusions included in this report. Section 2 of this report describes my opinions and includes a discussion of the substantive information bases, analyses, and assumptions that I used in their development. In summary, my opinions in this Matter are:

- **OPINION 1** – Despite the existence of readily available information regarding the presence of historical fill at the Property, Plaintiffs failed to conduct adequate pre-acquisition due diligence necessary to satisfy the requirements of qualifying for the innocent landowner defense to CERCLA liability.
- **OPINION 2** – A capping remedy at the Property would be typical and appropriate to address risks to human health and the environment associated with the alleged coal ash fill. Removal and off-site disposal of the alleged coal ash fill material constitutes an improvement of the property that is not necessary to achieve relevant remedial action objectives.

- **OPINION 3** – In the event it is determined that coal ash is present at the Site, it is important to recognize that coal ash was commonly offered by industrial users of coal for reuse as fill material, and widely accepted as an appropriate fill material, in the timeframe that coal ash was allegedly placed at the Property.

In addition, I would like to note that I have reviewed and specifically considered the information and opinions in the FRCP 26 Expert Report by Charles A. Rich, PG, CPG, EP, CSBA, Environmental Consultant, dated 6 April 2018 (“Charles Rich Report”), which I have referenced relative to several of my opinions in Section 2.

2. DISCUSSION OF OPINIONS

What does not appear to be in dispute in this Matter is that, historically, Mr. Anthony G. Stigliano, and subsequently his Estate, owned the Property from 1954 until November 2002 and accepted fill materials to build up lower elevations of the Property along Prospect Avenue. So, my opinions do not focus on this aspect of the history of the Property. Generally, I have been asked to opine on the appropriateness of environmental due diligence conducted by the Plaintiffs, the appropriateness of the remedial approach for the Property, as well as typical historical uses of coal ash based on my experience. I have addressed each of these under my three opinions below.

2.1 **OPINION 1 – Despite the existence of readily available information regarding the presence of historical fill at the Property, Plaintiffs failed to conduct adequate pre-acquisition due diligence necessary to satisfy the requirements of qualifying for the innocent landowner defense to CERCLA liability.**

It is my opinion, based on the information presented below, that the Plaintiffs did not conduct environmental due diligence efforts prior to acquisition of the Property that were appropriate and consistent with a claim of “innocent landowner” or “innocent purchaser” protection under the CERCLA.

2.1.1 Basis for Innocent Landowner Protection (ILP) under CERCLA (AAI and ASTM)

In response to growing concern over the existence of contaminated sites and the resulting risk to the public, Congress passed CERCLA in December 1980. The passage of CERCLA, and the subsequent amendments, including notably the Superfund Amendments and Reauthorization Act (SARA) in 1986 and Small Business Liability Relief and Brownfields Revitalization Act (the “Brownfields Amendments”) in 2002, has served as the basis of environmental regulation of hazardous substances since the 1980s. The CERCLA program, enacted at the Federal level has been captured in comparable State-level regulations as well, collectively governing the process in which contaminated sites are identified, investigated, and ultimately remediated.

A key component of CERCLA, its amendments, and governing regulations is the assignment of liability to parties with responsibility for the presence of hazardous substances at a site, as well as the establishment of protections against CERCLA liability for certain parties involved in transactions of contaminated sites. These liability protections, or defenses, include the so-called “innocent landowner defense” or “innocent landowner protection” (ILP) as established by SARA in 1986. In the context of a contractual relationship (i.e., a contract between parties in a real estate transaction) the ILP provides a defense to strict liability as described in CERCLA § 101(35). Under this section, a defense to liability arising out of a contractual relationship can be established if: *“At the time the defendant acquired the facility the defendant did not know and had no reason to know that any hazardous substance which is the subject of the release or threatened release was*

disposed of on, in, or at the facility”.³ The term “Reason to know” is further clarified through the definition of the term All Appropriate Inquiries (AAI) under § 101(35)(B)(i) as follows:

“(i) ALL APPROPRIATE INQUIRIES. —To establish that the defendant had no reason to know of the matter described in subparagraph (A)(i), the defendant must demonstrate to a court that—

(I) on or before the date on which the defendant acquired the facility, the defendant carried out all appropriate inquiries, as provided in clauses (ii) and (iv), into the previous ownership and uses of the facility in accordance with generally accepted good commercial and customary standards and practices...”

Beginning in the late 1980s, ASTM International⁴ (ASTM) convened a panel of engineers, consultants, attorneys, and other parties to real estate transactions to develop industry standard guidance for conducting and documenting the “all appropriate inquiry” process. This led to the 1993 publishing of the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E 1527-93). This Standard Practice, also commonly referred to as the Phase I ESA Standard, was revised in 1997, and again in July 2000. The 2000 version of the Phase I ESA Standard (ASTM E 1527-00) was the prevailing standard for conducting environmental due diligence and AAI at the time of the property transactions relevant that are the subject of this Matter.

The stated purpose of ASTM E 1527-00 is to: “*to define good commercial and customary practice ... for conducting an environmental site assessment of a parcel of commercial real estate*”.⁵ ASTM E 1527-00 further states: “*this practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner defense to CERCLA liability: that is, the practices that constitute ‘all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice’*”.⁶ While I am aware that the ASTM E 1527-00 was not intended to be used customarily for real estate transactions of single family residential properties, it was clearly and affirmatively intended for use in commercial real estate transactions (as defined in ASTM E 1527-00) to be applicable when the transaction of residential property is intended for development (or subdivision and development as was contemplated in this Matter) as follows: “*...a commercial real estate transaction does include real*

³ CERCLA § 101(35)(A)(i).

⁴ Formerly known as the American Society for Testing and Materials.

⁵ ASTM E 1527-00 at Section 1.1.

⁶ Ibid.

*property purchased or leased by persons or entities in the business of building or developing dwelling units.”*⁷ So, in the timeframe of the transactions that are relevant to this Matter, a Phase I ESA, conducted in accordance with ASTM E 1527-00, was the industry standard to conduct the environmental due diligence and AAI necessary to support ILP associated with the Property.

2.1.2 Plaintiffs proceeded through multiple property transactions (“2002 Acquisition” and “Property Subdivision Transactions”) that triggered the need for AAI to support a basis for ILP

I note that there are multiple property transactions that relate to this Matter. The first transaction was the acquisition of the Property by Saeid Jalayer from the Estate of Dr. Anthony Stigliano in November 2002. This was followed by multiple transactions in which the Property, or portions thereof, was subdivided and acquired by individual family members of Mr. Jalayer. For the purposes of this opinion, I define the November 2002 property transaction between the Estate of Dr. Stigliano and Mr. Jalayer as the “2002 Acquisition”, and the subsequent subdivision and acquisition by the Jalayer family members (also Plaintiffs in this matter) with deeds dated on or about 7 April 2005 [Jalayer 668], as the “Property Subdivision Transactions”.

Individually, and collectively, these transactions constituted a “*commercial real estate transaction*” as defined in ASTM E 1527-00 because they were intended for the development and building of housing units at the Property. This fact is supported by deposition testimony where Mr. Jalayer acknowledges his plan to build multiple residential units, not for himself, but for sale to third parties [Deposition of Mr. Jalayer, at pg. 31]. Mr. Jalayer said that he was looking for a suitable property to subdivide in a manner that would support construction of multiple dwellings as early as 1999 or 2000 [Deposition of Mr. Jalayer, at pg. 18]. In fact, before November 2002, Mr. Jalayer indicated [Deposition of Mr. Jalayer, at pg. 66] that he filed documents with the Village of Sea Cliff to execute such a subdivision of the Property, and/or building upon the Property prior to his actual acquisition. I have reviewed documentation of a Notice of Disapproval, dated 6 January 2000 [North Shore production; no bates ID] and a correspondence copied to Mr. Stigliano, dated 18 January 2001, denying an Application for Building Permit [CSG Stigliano 91], as evidence of this point. I have also reviewed documents from the Village regarding requirements, limitations, and conditions of subdivision following the 2002 Acquisition [e.g. Jalayer 649-650; Jalayer 654]. Mr. Jalayer’s plans and actions to subdivide and develop the Property with multiple housing units to be resold confirms that the 2002 Acquisition and Property Subdivision Transactions were “*commercial real estate transactions*”. For the reasons discussed above, ASTM E 1527-00 was the customary and appropriate industry guidance for completing a Phase I ESA to conduct AAI for such transactions.

⁷ ASTM E 1527-00 at Section 3.3.9.

2.1.3 *Plaintiffs did not conduct AAI prior to the 2002 Acquisition or as part of the Property Subdivision Transactions*

It is evident that Mr. Jalayer performed some means of inquiry regarding the property prior to the 2002 Acquisition. According to the deposition of Mr. Anthony Stigliano (representative for the estate of Dr. Stigliano), Mr. Jalayer approached Mr. Stigliano in 2000 regarding a purchase of the Property and informed Mr. Stigliano that he “had done his due diligence” including having a conversation with town officials including a Mr. Direnzo [Deposition of Mr. Stigliano a pg. 64]. Mr. Jalayer again approached Mr. Stigliano regarding acquiring the Property in 2002 and, according to Mr. Stigliano, Mr. Jalayer “talked about that he was going to do a phase I” [Deposition of Mr. Stigliano a pg. 65]. No Phase I ESA appears to have been completed at the time, but Mr. Jalayer, with consent from Mr. Stigliano reportedly conducted some sort of “test pitting” [Deposition of Mr. Stigliano a pgs. 65-66].

It is evident that Mr. Jalayer did not conduct AAI environmental due diligence prior to the 2002 Acquisition. He stated that he did not conduct inquiries as part of due diligence because he was generally not familiar with the “*types of problems*” the property could have [Deposition of Mr. Jalayer, at pg. 184]. Mr. Jalayer did not conduct an independent record search, make inquiries with neighbors or the community, or search newspapers for information related to the property [Deposition of Mr. Jalayer, at pg. 182]. However, he did have conversations with legal counsel, an architect, and personnel from the Village of Sea Cliff regarding the process of subdividing the Property [Deposition of Mr. Jalayer, at pg. 182]. In my experience, such advisors would have been aware of the need for or would have been able to support appropriate environmental due diligence activities. This also shows the Mr. Jalayer had the capacity and ability to consult with professional advisors and information sources, such as those that would be needed to conduct AAI.

Further, the remaining Plaintiffs, those parties to the Property Subdivision Transactions did not conduct independent due diligence [Deposition of Mr. Jalayer, at pgs. 209-210]. As stated, the family member Plaintiffs did not complete even an independent or individual reconnaissance of the Property [Deposition of Mr. Jalayer, at pg. 209]. According to Mr. Jalayer, at the time of the transfer of the Property to the family member Plaintiffs, he did not inform them of “*issues*” related to the Property, and, in particular, the presence of “*coal ash*” because he “*didn’t know about the coal ash*” at the time of the transaction [Deposition of Mr. Jalayer, at pg. 210]. This statement contradicts the fact that Mr. Jalayer contracted a consulting firm, Dru Associates, in early 2004 to conduct a Phase I ESA. The resulting 2004 Phase I ESA report [Jalayer 546] predates the subdivision in 2005 and specifically identifies historical fill as an issue at the Property (see section 2.1.5, below).

2.1.4 Even without conducting AAI, it is likely that Plaintiffs had at least General Knowledge of the presence of historical fill at the Property before the 2002 Acquisition and/or the Property Subdivision Transactions

It was clear or should have been clear to any observer of the Property that there exhibited an unnatural topography and that certain portions were encumbered by unnatural materials. In fact, fill material and debris were observed at the ground surface, as noted by the consultant for Dru Associates completing the site reconnaissance portion of the Phase I ESA in 2004. That reports notes the following:

“Most of the property has an unlevel terrain indicating that in the past there was fill dirt brought onto the property. Scattered debris can be found mainly in the south west corner. The debris includes concrete slabs, rocks, and some metal scraps.” [Jalayer 1540]

The 2004 Phase I ESA report also references soil borings completed by Ace Borings in 1999 [Jalayer 1541]. While only four borings were advanced, they identified “**Fill**, silt, fine sand” (emphasis added) ranging in thickness from 19 to 39 feet above the native material. These borings were reportedly provided to Mr. Jalayer by Mr. John Barbieri, who is identified as Mr. Jalayer’s “*first architect*” for the proposed work at the Property [Deposition of Mr. Jalayer, at pg. 112] and although I am not aware of the exact date that these borings were provided to Mr. Jalayer, it is not unreasonable to conclude that they were available at some time after their preparation in 1999 and prior to 2002. Mr. Jalayer himself is referenced in the Phase I ESA report with general knowledge of filling in the section documenting an interview with the site owner as stating: “*Mr. Jalayer, who acknowledged that the site has been filled, in the past, although the source of the fill is unknown. The filling is reputed to have occurred during the 1970's*” [Jalayer 1541].

2.1.5 AAI conducted prior to the 2002 Acquisition or as part of the Property Subdivision Transactions would have readily identified the presence of historical fill material at the Property

Although extremely unlikely for the reasons discussed above, even if Mr. Jalayer did not have knowledge of the historical fill at the Property prior to the 2002 Acquisition, there was ample information available such that any reasonable Phase I ESA of the property would have identified information regarding the historical fill. As evidenced by his retention of Dru Associates in 2004, and subsequently of other parties to collect and analyze samples at the Property, Mr. Jalayer was familiar with environmental consulting resources. So, there is no apparent reason that he could not have engaged an environmental consultant prior to the 2002 Acquisition to conduct a Phase I ESA of the Property. If he did, any proper Phase I ESA would have identified the historical fill.

Multiple relevant sources of information were available to Plaintiffs prior to the 2002 Acquisition. Over 40 years of records were available at the Village of Sea Cliff; and the Village itself has acknowledged a file containing documentation of “illegal fill”, as indicated by a 22 July 2002

correspondence from the Village to Gerard Stigliano [CSG Stigliano 120]. For example, Plaintiffs' own expert, Peter Dermody, CPG, cites numerous examples of records he reviewed in development of his expert report [Dermody, 2018]. Dermody cites two specific items: 1) minutes of a meeting of the Village of Sea Cliff Board of Trustees, dated 3 December 1956 [Sea Cliff 004132], and 2) a letter dated 7 November 1987 describing the placement of fly ash at the Site [Dermody, para. 112, at pg. 16]. It can be inferred from the abundance of material presented, including litigation over the dumping of "cesspool" materials, and covering a period from the 1950s to the 1990s, that a very basic inquiry made to Village regarding conditions of the Property would have yielded information regarding past filling activities at the Property. In fact, Mr. Stigliano drew this conclusion himself when other potential purchasers of the Property had decided against an acquisition after their discussions with personnel from the Village [Deposition of Stigliano, at pgs. 84-85]; a point that is corroborated by the Village in their correspondence to Mr. Stigliano [CSG Stigliano 120]. So, I am confident that a review of historical files maintained by the Village of Sea Cliff in 2002 in a manner consistent with the requirement to review historical sources contained within section 7.3.4 of the ASTM E 1527-00 Standard Practice would have yielded sufficient information to identify the placement of historical fill at the Property.

Mr. Jalayer contracted Dru Associated to complete a Phase I ESA of the Property in April 2004, barely a year after the 2002 Transaction. That Phase I ESA identified the presence of historic fill and recommended further testing. There is no reason for me to think that that same conclusion would not have been made in prior to the 2002 Acquisition. The 2004 Phase I ESA report concludes that, "*the site does contain evidence which would indicate the need for further investigation...*" [Jalayer 336]. And further, "*no conclusion can be drawn about the environmental condition of the fill on the site, and so further testing is recommended*" [Jalayer 336]. It is my opinion that site reconnaissance, such as what was conducted in during the Phase I ESA in 2004, and consistent with the review of exterior observations and solid waste contained within section 8.4.4.4 of ASTM E 1527-00, would have yielded information sufficient to identify the placement of historical fill at the Property.

Lastly, I note that once in ownership of the Property, and following the physical identification of the alleged coal ash in the subsurface in or about 2006, Mr. Jalayer began making basic inquiries [Deposition of Jalayer, starting at page 136], which revealed common knowledge among neighbors of the historic placement of fill. Mr. Jalayer further solicited a statement from one such neighbor, Bruce Wagner, who provided Mr. Jalayer with a correspondence containing the following statement:

"It was common knowledge that the landscape of the 34 Woodridge property was extended a great deal by the use of fill from many sources. You could see it under the surface where it banked: cement from roads, washing machines, stones, and the like." [Jalayer 960]

2.1.6 Agreement with Opinion 3 of the Charles Rich Report

With respect to the opinions of Defendant Stigliano's expert, Charles Rich, I have reviewed the opinions contained within the Charles Rich Report and specifically agree with his opinion that:

"Plaintiff Jalayer failed to perform the required due diligence required by statute and EPA guidance prior to purchasing the property, and as such cannot avail himself of the innocent purchaser defense under CERCLA. Accordingly, he remains a Responsible Party as the current site owner for any allowable site costs incurred." [Rich, 2018]

I note further that while Rich focuses his opinion related to Mr. Jalayer and the 2002 Acquisition, I would extend this opinion to the other Plaintiffs who subsequently acquired portions of the Property through the Property Subdivision Transactions and failed to conduct independent due diligence consistent with AAI prior to entering into transactions with Mr. Jalayer. Therefore, these other Plaintiffs also have not documented that they completed AAI in a manner that would support an ILP defense under CERCLA.

2.2 **OPINION 2 – A capping remedy at the Property would be typical and appropriate to address risks to human health and the environment associated with the alleged coal ash fill. Removal and off-site disposal of the alleged coal ash fill material constitutes an improvement of the Property that is not necessary to achieve relevant remedial action objectives.**

It is my opinion, based on the information presented below, that an on-site containment (e.g., capping) remedy would be appropriate to address the historical fill, including the alleged coal ash, at the Property and that actions to completely remove the historical fill material, not only are not necessary to achieve the RAO for the Property, but in effect would be an improvement to the Property.

2.2.1 Remedy Selection Under CERCLA

As described in Section 2.1.1 of this report, the CERCLA program, in conjunction with comparable State-level regulations, collectively govern the process by which contaminated sites are identified, investigated, and ultimately remediated. The requirements for remedy selection under CERCLA are described in 40 CFR 300.430. In section 40 CFR 300.430(a)(1)(iii)(B), the EPA states its expectation for remediation for development of appropriate remediation measures:

"EPA expects to use engineering controls, such as containment, for waste that poses a relatively low long-term threat or where treatment is impracticable."

EPA [1999] defines the characteristics of low, long-term threat material in the document entitled "Presumptive Remedy for Metals-in-Soils Sites", on Page 6:

“Low-level threat wastes generally include contaminated source material of low to moderate toxicity, such as surface soil containing contaminants of concern that generally are relatively immobile to air or ground water (i.e., non-liquid, low volatility, low leachability contaminants such as high molecular weight compounds) in the specific environmental setting; and low toxicity source material, such as soil and subsurface soil concentrations not greatly above reference dose levels or that present an excess cancer risk near the acceptable risk range.

As shown in the Alternatives Analysis Report (AAR)⁸ for the Property, potential contaminants detected in the alleged coal ash at the Property were not present at concentrations significantly above reference standard levels. The Remedial Investigation Report (RIR) [Cornerstone, 2013, page 3-8] states *“Based on the analysis above and the determination that the SWQS-SA [site water quality standards for SA waters] is the SCG [site cleanup goal] for the Site groundwater, there are no metals detected above the Site SCG. Based on this data in the AAR, the coal ash at the site meets the description of “low long-term threat material”, indicating that the alleged coal ash has not impacted groundwater quality and confirming that the designation of the alleged coal ash as low long-term threat material is appropriate.*

2.2.2 Remedy Selection Under the Brownfield Cleanup Program

The New York State Brownfield Cleanup Program (BCP) is an element of the New York State Environmental Remediation Program, the requirements of which are codified in 6 NYCRR Part 375. The program covers all environmental site remedies under the jurisdiction of the state. Technical guidance for site investigation and remediation of sites subject to the requirements of 6NYCRR Part 375 are contained in NYSDEC document DER-10, dated May 2010. DER-10 provides specific procedures for selection of Remedial Action Objectives (RAOs) and procedures to follow in identifying and selecting remedial actions that will achieve the RAOs. The AAR indicates that it was completed in accordance with the provisions of DER-10.

2.2.3 *As defined by the assessed risks to human health and the environment at the Property, the only RAO is the prevention of dermal contact or incidental ingestion of contaminants detected in soil*

Under both CERCLA and the BCP, the need for a remedial action is established based on the presence of a risk to human health or the environment (HHE). A site that poses no risk to HHE

⁸ See Figure 2-1 and Page 11 of the AAR. Figure 2-1 shows that concentrations exceeded “NYSDEC Restricted Use Soil Cleanup Objective for Protection of Public Health Residential” in material identified as coal ash for only arsenic and barium. Arsenic was reported in the range 25 mg/kg to 178 mg/kg versus the Cleanup Objective level of 16 mg/kg and Barium was reported in the range 602 mg/mg to 787 mg/kg versus the Cleanup Objective level of 350 mg/kg. Regarding groundwater, at the top of Page 11 of the AAR, states *“Other Site soil contaminants, the metals (arsenic, barium, chromium, and hexavalent chromium) detected above Residential SCOs, were not detected in groundwater beneath the Site (from dissolved metals samples).”*

receptors will require no remedial action. A site that poses a risk to an identified risk receptor greater than a regulatorily-defined acceptable threshold requires a remedy specifically designed to mitigate the actual risk. In general, a risk exposure assessment will be conducted for a given site beginning with a series of qualitative evaluations, wherein the elements of risk are identified, such as the contaminants of concern, the media affected by the contaminants, the pathways for exposure to receptors, and the actual HHE receptor population that may be exposed. As appropriate, after a qualitative assessment is completed, a quantitative analysis may then be done to further assess the risk.

I note that the two regulatory frameworks relevant to this Matter—CERCLA and the BCP—differ somewhat in the steps appropriate to meet the risk assessment requirements of the respective programs. Under CERCLA, the presence of a risk to HHE is evaluated by performing four well-defined and established steps:⁹ (i) *hazard identification*, an evaluation of whether contaminants of potential concern (COPCs) have the potential to impact HHE; (ii) *response evaluation*, a description of the relationship between an exposure to COPCs and effects on HHE; (iii) *exposure assessment*, an evaluation of the level of contact between the hazard and humans or the environmental receptors; and (iv) *risk characterization*, a summary of the nature and extent of a risk to the exposure to environmental stressors. Under the BCP, only the exposure assessment step is specifically required,¹⁰ including a description of the COPCs, an explanation of how and where HHE might be exposed to the COPCs, a description of the routes of exposure, and a characterization of the populations that could be exposed at the point of exposure. To address the risks to HHE posed by exposure to the COPCs, the BCP references generic RAOs for soil and groundwater¹¹ and states that the generic RAOs are to be used where applicable. The RAOs are intended to address the need to prevent exposure to the COPCs.

For the Jalayer Property, an exposure assessment was performed [Cornerstone, 2013, Section 4] as required by the BCP and is documented in the RIR [Cornerstone, 2013, Section 4]. The contaminants detected at the Property at concentrations above DER-10 SCGs addressed in the exposure assessment in the RIR were arsenic, barium, chromium, dieldrin, araclor-1254, benzo(a)anthracene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene.¹² As stated in the RIR, the pathway of exposure to these COPCs would be through dermal contact or incidental ingestion where they are present in soil or groundwater.¹³ I further point out that the Site and surrounding area are provided with municipal water and exposure to groundwater is unlikely.

⁹ Risk Assessment Guidance for Superfund (RAGS), EPA/540/1-89/002, December 1999.

¹⁰ DER-10, Appendix 3B.

¹¹ <http://www.dec.ny.gov/regulations/67560.html>.

¹² From Section 3.1 of the RIR [Cornerstone, 2013], “...based on the Residential SCO, four SVOCs (benzo(a)anthracene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene), one pesticide (dieldrin), one PCB (aroclor-1254), and three metals (arsenic, barium and chromium) exceeded the Site SCG for soil.”

¹³ RIR, Section 4.4.

Therefore, the potential risk exposure at the Property is in effect further limited to only dermal contact or ingestion of soil.

The AAR [Cornerstone, 2014, p. 13] specifically addresses the RAOs for the Property in Section 3.2. In this section, the AAR references the provisions of DER-10 and states that “...*the only contaminated media requiring remediation are on-site soils*”. Later in Section 3.2, the AAR states that the only RAO for the Site is “*To prevent exposure of human receptors to contaminants detected in on-Site soil via dermal contact or incidental ingestion.*” The AAR [Cornerstone, 2014, p. 22, para 5.1.1.5] also states “*This remedy...would require implementation of a soil or building structural cap... This alternative is protective of human health and the environment.*”

2.2.4 Capping is recognized by CERCLA, the BCP, Plaintiff’s engineer, and Plaintiff’s expert to be an appropriate remedy for achieving the RAO of preventing dermal contact or incidental ingestion of soil

CERCLA guidance on remedy selection for low long-term threat wastes for metals-in-soils sites, such as the alleged coal ash at the Property, is provided by EPA [1999]. This document, on page 2, states that “*The presumptive remedy for low-level threat metals-in-soil waste that is not targeted for treatment is: Containment - Containment of metals-in-soil waste includes vertical or horizontal barriers.*” This same section clarifies that non-containment remedies are appropriate for principal-threat wastes, not low-long term threat materials.

The BCP, in the guidance provided in DER-10, describes containment as the appropriate technology for sources contamination that do not include “...*all free product, concentrated solid or semi-solid hazardous substances, dense non-aqueous phase liquid, light non-aqueous phase liquid and/or grossly contaminated media...*”.¹⁴ The alleged coal ash material at the Property does not meet this description and was not characterized as such in the AAR. Accordingly, the BCP recognizes capping as an appropriate remediation technology for the Site.

In Section 5.1.1 of the AAR, the Plaintiff’s consultant discusses the overall level of protectiveness provided by the various remedial alternatives. Each remedial alternative that includes capping is concluded to be protective of public health and the environment. Further, in Section 6, the Plaintiff’s consultant recommends the capping remedy over other remedies. As such, Plaintiff’s consultant agrees that capping is an appropriate remedy for the Site.

Finally, in his report, the Plaintiff’s expert Mr. Dermody agrees that capping is a typical and appropriate remedy for this Site, because “...*it was protective and used proven conventional technology, the remedy would generally be consistent with the character of the surrounding*

¹⁴ DER-10, Section 4.1(d)(2)(i), describes source materials that must be remedied by removal; this description does not include coal ash or low long-term threat material. DER-10, Section 4.1(d)(2)(ii) describes containment as the remedy appropriate for sources that do not meet the descriptions in Section 4.1(d)(2)(i).

residential areas, with only a modest change from single family residential to multi-family residential, and the remedy was the lowest cost, effective alternative.” [Dermody, para. 80].

Capping remedies to provide containment is consistent with my experience with numerous sites across the country.

2.2.5 Excavation is not needed to address the RAO. It is only needed to satisfy the zoning criteria imposed on the remedy selection process by the BCP and, therefore, constitutes an improvement to the Property and not necessary remedial action

As established in Section 2.2.4, capping is an appropriate remedy for the alleged coal ash at the Property. Based on the information provided in Sections 5 and 6 of the AAR, excavation is not needed to prevent dermal contact or incidental ingestion of soil. In fact, excavation is only suggested as a contingency remedial alternative in order to satisfy the zoning criteria imposed on the remedy selection process by the BCP for the redevelopment plan intended by the Plaintiff, not to provide a degree of protectiveness that could not otherwise be achieved using a capping alternative. Therefore, selection of a non-capping remedy results from the actions of the Plaintiff, not a requirement to meet the RAO. Because excavation of fill material at the Property is not required to successfully achieve the RAO, it is an improvement to the Property and not a necessary remedial action.

2.2.6 Agreement with Opinion 5 of the Charles Rich Report

With respect to the opinions of Defendant Stigliano’s expert, Charles Rich, I have reviewed the opinions contained within the Charles Rich Report and specifically agree with his opinion that capping is the appropriate and presumptive remedy for this Property and that the purpose served by the excavation alternative is only to meet Village requirements for Plaintiff’s preferred redevelopment approach for the Property.

2.3 OPINION 3 – In the event that it is determined that coal ash is present at the Site, it is important to recognize that coal ash was commonly offered by industrial users of coal for reuse as fill material, and widely accepted as an appropriate fill material, during the timeframe when coal ash was allegedly placed at the Property.

It is my opinion, based on the information presented below, that the use of coal ash as fill material has been a widely accepted and encouraged practice for decades, and that coal ash was commonly offered for this purpose.

2.3.1 The beneficial use of coal ash as a structural fill has been common in the United States since at least the mid-twentieth century

Numerous studies demonstrate the widespread acceptance and encouragement of the use of coal ash as fill in the United States during the timeframe that coal ash was allegedly placed at the Property. The historic and widespread use of coal ash in this application is illustrated in the 1979 document “Fly Ash Structural Fill Handbook” [EPRI, 1979], which references studies from the 1970s and earlier on the recommended use of fly ash for structural fill applications.¹⁵ In addition, the USEPA, the Federal Highway Administration (FHWA), and the Department of Energy, along with the American Coal Ash Association and the Utilities Solid Waste Activities Group, produced a document entitled “Using Coal Ash in Highway Construction: A Guide to Benefits and Impacts” [USEPA et. al., 2005] to encourage the increased use of coal ash products, which states on page 30 “EPA supports and encourages the beneficial use of coal combustion products in highway construction applications.” This document describes several large-scale applications of the use of coal ash as structural fill.

NYSDEC approves the use of coal combustion fly ash as a “Case Specific Beneficial Use” under Part 360.12(d)(3). DEC has approved dozens of beneficial use applications for use of coal ash, including uses as structural fill [DEC, 2018].

2.3.2 The widespread use of coal ash as a fill material is well known, and the appropriateness as a structural fill material is well established

The widespread use of coal ash as fill is demonstrated by the development of standards for the use of coal ash material in these applications. ASTM produced a standard guide for construction of coal ash fills [ASTM, 2003]. The standard notes, in Section 4.2.1, that USEPA “...encourages the utilization of coal combustion by-products and supports State efforts to promote utilization in an environmentally beneficial manner...”. This standard, and the large number of references identified at the end of the standard,¹⁶ indicate the widespread acceptance of the use of coal ash as a fill material.

The Electric Power Research Institute (EPRI) also developed guidance for the use of coal ash as fill in its document entitled “Fly Ash Structural Fill Handbook” [EPRI, 1979]. The document references numerous studies of the properties of coal fly ash and recommended physical and chemical testing procedures for fly ash as structural fill. The document describes applications prior to the publication date of 1979 as well as the need to consider local conditions in assessing the potential for leachate from the fill to cause environmental impacts (which notably have not

¹⁵ See references section of EPRI, 1979.

¹⁶ See References section on Page 8 of ASTM standard E-2277-03.

been detected at the Property) and the need to cover the fly ash fill upon achieving final grades [EPRI, 1979, p. 6-25 and 6-27].

2.3.3 LILCO would have been acting consistently with common practice if it offered coal ash for use as fill material in the timeframe referenced by the Plaintiff

As described above, in the mid-twentieth century, producers of coal ash would offer it for use in fill applications. This practice was widely acknowledged and even encouraged by USEPA. I have not seen conclusive evidence in the documents that I reviewed demonstrating that LILCO did in fact offer coal ash for reuse at the Property or that coal ash from the LILCO Glenwood Landing Power Plant was actually placed at the Property. But if LILCO had offered coal ash from the plant for such purpose, such an offer would have been consistent with industry practices at the time.

ATTACHMENT 1

Resume, Michael H. Berman, P.E. (DC, MD, VA), CHMM



MICHAEL H. BERMAN, P.E., CHMM

**environmental liability management
remediation/process engineering design
environmental site investigation**

EDUCATION

M.Eng., Civil and Environmental Engineering, Cornell University, Ithaca, New York, 1998

B.S., Chemical Engineering, Bucknell University, Lewisburg, Pennsylvania, 1993

REGISTRATIONS AND CERTIFICATIONS

Professional Engineer – Virginia No. 034540; Maryland No. 0032794; DC No. PE904406

National Council of Examiners for Engineering and Surveying, Certificate Number 25310

Certified Hazardous Material Manager, Senior Level

OSHA Hazardous Waste Operations/Emergency Response

CAREER SUMMARY

Mr. Berman has more than 20 years of experience supporting clients with business decisions related to environmental liabilities. His practice focuses on assessing the nature and extent of environmental issues, developing remedial scenarios and approaches, and quantifying environmental liabilities, and supporting allocations for a wide variety of sites. Mr. Berman has assessed a broad range of sites, including chemical manufacturing, mining, pulp and paper, wood treatment, petroleum and petrochemical, electric utility, railroad, and industrial manufacturing sites; RCRA, CERCLA, state lead, and voluntary cleanup sites; and sites contaminated with metals, chlorinated solvents, petroleum hydrocarbons, fuel oxygenates, and energetics. He specializes in estimating environmental conditions and quantifying the scope and cost of potential remedial scenarios for environmental insurance claims and underwriting, corporate due diligence, financial reporting and environmental litigation support, and he has conducted such analyses for thousands of sites across the U.S. and in Canada, Latin America, and Europe. As a component of these projects, Mr. Berman, also supports clients with assessment and defense related to allocation of environmental liabilities based on contaminant driver, historical operation, and corporate history forensics.

Through his work supporting the U.S. EPA Office of Solid Waste and Emergency Response, Mr. Berman has co-authored national guidance documents on the topics of remediation costing, chlorinated solvent bioremediation, in situ thermal treatment, fuel oxygenates treatment technologies, groundwater pump and treat, and permeable reactive barriers. He has managed investigations and remedial actions to address chlorinated solvents, petroleum hydrocarbons, perchlorate, and various inorganic contaminants in soil, groundwater, and surface water at sites engaged under various federal (RCRA and CERCLA) and state cleanup programs.

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Mr. Berman manages Geosyntec's support on conducting environmental due diligence for global portfolios of sites through our CAT Alliance joint venture.

Environmental Liability Assessment/Management

Environmental Liability Valuation Litigation Support Project, Tronox Bankruptcy. Project Manager and consulting expert for multi-year litigation support project involving the evaluation and valuation of potential environmental remediation liabilities associated with a portfolio of more than 2,000 formerly owned sites; coordinated team of professionals in review of case document management archive containing millions of documents, evaluation of the cost of future remedial scenarios, and coordinating and supporting evaluation by a multi-faceted project team, including multiple law firms and teams of external testifying and consulting experts.

Cost Allocation Consulting Expert, Multiparty Superfund Sediment Site, Northeast U.S. Supported technical development of remedial design allocation strategy and corporate history and potential contaminant source research and forensics for party involved in allocation negotiations for sediment remedial design at CERCLA site.

Environmental Liability Valuation and Consulting Support, Official Committee of Unsecured Creditors, Exide Technologies Bankruptcy. Retained to provide expert consulting support to the Committee in assessing certain environmental liabilities that may affect their standing in the bankruptcy proceedings. Led the project team, including identifying and coordinating a team of technical specialists in battery industry operations and associated environmental liabilities, California regulations, and lead contamination and forensics. Developed approach for valuing environmental liabilities associated with complex portfolio of sites in the context of bankruptcy proceedings.

Insurance Claim Support, Multiple claims, Europe. Supported insurer with technical review of multiple claims for sites in the United Kingdom, Italy, Denmark, Sweden, and Poland. Technical assessment included review of regulatory drivers, source and timing of contamination, and appropriateness of claimed costs.

Insurance Claim Support, Confidential U.S. Refiner. Supported review of technical components of large insurance claim covering 20 refinery sites in the U.S. and more than 80 claimed conditions. Geosyntec led acquisition of site documents relevant to claim review and development of source and timing reports relevant to available coverage. Worked closely with coverage counsel to support claim review.

CCR Closure/Remediation Cost Assessment, Confidential Electric Power Generator, Northwest U.S. Prepared assessment of potential costs to address remediation and closure of all coal combustion residual units at a major power plant in support of business management and a potential transaction.

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Environmental Reserve Process Support, Confidential Gas Utility, mid-Atlantic U.S. Supported the development of a standard operating procedure and cost tracking tool to support ongoing environmental reserve decision-making and to support management transition.

Portfolio Environmental Liability Assessment, Global Chemical Manufacturer. Geosyntec was engaged to support the evaluation of potential environmental contamination liabilities at a portfolio of more than 1000 acquired sites in the United States. Our support involved developing and implementing a systematic screening methodology based on company-specific and public information as well as a dynamic web mapping tool to support ongoing assessment and environmental compliance tracking.

Probabilistic Environmental Liability Cost Model, Pharmaceutical Manufacturing Site, Ireland. Developed a decision tree analysis and probabilistic cost model to support management assessment of potential soil and groundwater cleanup costs required to address known areas of MTBE and dichloromethane contamination and to address potential environmental contamination residuals that may be encountered after site shutdown.

Excess Soil Management Location Assessment, Construction Joint Venture, Washington, DC. Supported construction joint venture on major capital project to evaluate potential environmental liability issues at two potential alternate excess soil management locations—a former sand and gravel mine and a construction debris landfill.

Acquisition Due Diligence, Private Equity. Engaged by environmental counsel for potential bidder to conduct phased environmental due diligence for a portfolio of more than 30 non-hazardous waste management and processing sites. Assessment of environmental contamination and compliance was conducted in the form of desktop reviews, confirmatory site visits, and/or Phase I ESAs/limited environmental compliance reviews for each site and was documented in a single consolidated report. All assessments and reporting was completed within two weeks.

Solar Project Environmental Fatal Flaw Evaluation, Solar Developer, Eastern U.S. Prepared environmental compliance and permitting fatal flaw evaluations for several potential solar projects in Maryland and Massachusetts.

International Environmental Due Diligence and Compliance Support, Global Manufacturing Client. Supported multiple projects triggered by acquisitions and divestitures in South Korea, India, The Netherlands, France, Australia, and China.

Property Transfer Litigation, Confidential Financial Client. Testifying expert on a matter relating to alleged environmental contamination on a former agricultural property sold for residential development; Prepared expert opinions and provided deposition and trial testimony relating to environmental remediation cost analysis and historical site characteristics relative to other comparable properties.

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Cost Allocation Expert Support, Superfund Site, Texas. Selected testifying expert on behalf of waste arranger on a matter related to allocation of site cost liability; Case settled prior to testimony.

PRP Cost Recovery Support, Confidential Client, New Jersey. Project manager for engagement focused on identifying and assessing viability of potential cost recovery targets associated with waste material dumped on an industrial property in northern New Jersey. Effort including fingerprinting chemical constituents driving site cleanup; specifying and managing research through database searches, Internet searches, and freedom of information act requests/file reviews; and compilation of a data site and summary documents to be used by counsel in support of cost recovery efforts.

Closure and Remediation Cost Modeling, Confidential Electrical Utility. Supported client's evaluation of potential cost impacts of 2014 Coal Combustion Residual rule changes associated with a large power generation station in the Pacific northwest. Developed comprehensive model of future anticipated costs associated with activities needed to: 1) closure impoundments, 2) remediate groundwater, 3) comply with administrative CCR rule requirements, and 4) address structural stability issues with several dikes and dams. Support was provided in the context of the anticipated CCR rule requirements, a potential ownership transition, and a regulatory rate case with the public utility commission.

Superfund Liability Assessment, Confidential Private Equity Client. Engaged through outside counsel to assess and model potential impacts associated with a potential share of a large Superfund site involving sediment contamination with dioxin and other constituents. Project also expanded to include assessment of potential product liability and legacy site liability issues.

MGP Site Portfolio Environmental Liability Model, Confidential Natural Gas Client. Engaged through outside counsel to model potential environmental liabilities associated with a portfolio of eleven former manufactured gas plant sites in the context of a planned acquisition of a natural gas distribution system.

MTBE Litigation, Confidential Client. Lead for technical team supporting testifying expert focused on evaluating potential environmental investigation and remediation costs at a number of release sites.

Remediation Scenario Cost Modeling, Confidential Client Former Aircraft Manufacturing Facility, California. Developed and ran custom costing model utilizing Monte Carlo simulation to estimate expected value of future remediation costs.

Environmental Cost Litigation, Washington Nationals Ballpark, Washington, D.C. Consulting and Testifying Expert in support of law firm providing counsel to former property owner. Provided technical analysis and expert opinion regarding environmental remediation cost estimates conducted for property taken via eminent domain proceedings. Overall project

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involved the review of relevant documents and drafting of two expert reports/declarations and providing expert deposition testimony. Case settled before trial in favor of client.

Insurance Cost Recovery, Confidential Client. Project Manager supporting insurance settlement negotiations pertaining to historic comprehensive general liability (CGL) coverage for a portfolio of electrical equipment manufacturing sites in the Midwest and Gulf Coast U.S. Analysis involved the estimation of future and documentation of past environmental remediation, investigation, and defense costs and in supporting negotiations with primary and secondary CGL carriers and their counsel. Overall analysis incorporated past and potential future investigative/remedial, toxic tort, and natural resource damage costs.

Environmental Costing Methodology Expert Support, Superfund Site, California. Presumed testifying expert for matter related to recovery of past and potential future remediation costs for a large groundwater remediation project. Evaluation involved developing independent estimate of potential future costs, including an assessment of the risk premium associated with the planned future remedial approach.

Environmental Insurance Litigation Support, RCRA Corrective Action, Virginia. Supported counsel for insured engaged in insurance claim litigation focused on recovering past and future costs for multi-media site investigation and remediation at a major manufacturing site. Provided strategy consulting and fact development support.

Insurance Settlement Project, Confidential Mining Company, Southwest U.S. Project Manager to quantify the overall potential environmental liability relative to historic insurance coverage at the client's portfolio of active and previously owned/operated mine sites, processing operations (smelters), and manufacturing operations, as well as numerous Superfund and other third-party sites at which the client was included as a PRP. Provided settlement support focusing on tracking regulatory developments relative to closure requirements for mining operations and correlating historic damages with insurance language and coverage limitations. Evaluated potential cost impacts from natural resource damage and other private-party environmental claims.

Insurance Settlement Project, Confidential Paper Company. Project Manager for a project to support stated environmental reserve estimates for a portfolio of more than one hundred paper mills, saw mills, wood treatment plants, manufacturing sites, and third-party liability/Superfund sites. A comprehensive review of all archived historic documentation was completed on an expedited schedule and an individual site narrative was prepared for each site. The site narratives and all relevant reviewed site documents were submitted to support an insurance claim being adjudicated under a court order.

Technical Committee Representation, 68th Street Superfund Site, Baltimore, Maryland. Client representative on PRP group Technical Committee. Participated in technical discussions on behalf of client and reviewed and coordinated comments on technical documents generated by project consultants.

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Insurance Settlement Project, Confidential Electric Utility, Mid-Atlantic U.S. Project Manager to quantify the overall potential environmental liability relative to historic insurance coverage at the client's portfolio of several hundred substations and service centers, as well as at historic manufactured gas plant properties. Evaluated regulatory development of RCRA standards for coal combustion waste and supported settlement negotiations with multiple insurance carriers.

Insurance Settlement Project, Confidential Petroleum Company. Project Manager to quantify the overall potential environmental liability relative to available insurance coverage at the client's portfolio of more than 1,000 active and previously owned/operated refineries, mining sites, transportation systems, terminals, packaging plants, and service stations, as well as numerous Superfund and other third-party sites at which the client had been listed as a PRP. Developed estimates of nature and magnitude potential natural resource damages and other private-party claims related to contamination and supported settlement negotiations with multiple insurance carriers.

Insurance Settlement Project, Confidential Electric Utility Client, Mid-Atlantic U.S. Senior Engineer for remediation cost estimating support and technical review during the preparation of a report that quantified past and potential future environmental cost liabilities for a portfolio of electric utility sites including power plants, substations, service centers, ash disposal sites, and former manufactured gas plant sites in the Mid-Atlantic U.S. Report was used to support settlement negotiations related to historic insurance policies. Provided support during site visits, meetings, and negotiations with several individual insurance carriers. Report was used to support settlement negotiations related to historic insurance policies.

Insurance Settlement Project, Confidential Electronics Manufacturer. Senior Engineer to develop remedial designs for multiple sites owned by a home appliance manufacturing company. Analyzed current and historic chemical production, storage, and disposal processes and data on soil, groundwater, and surface water contamination. Specified remedial approaches needed to comply with current and pending federal, state, and local regulations. Sized and costed ex situ and in situ treatment technologies, including groundwater pump-and-treat; capping; vertical containment barriers; soil vapor extraction; air sparging; bioremediation; and removal and disposal via landfilling, thermal desorption, incineration, and solidification. Analyzed extent of natural resource damages and property value diminution for sites.

Insurance Settlement Project, Confidential Railroad Client, Midwest U.S. Senior Engineer to provide remediation cost estimating support and technical review during the preparation of a report that quantified past and potential future environmental cost liabilities for a portfolio of historic railroad industry sites in the central U.S.

Insurance Settlement Project, Confidential Petroleum Company. Senior Engineer for preparation of reports that described historic environmental conditions and the expected future remedial approach. Estimated future remedial costs for client's portfolio of manufacturing and miscellaneous sites. Evaluated and quantified recoverable costs associated with oil exploration

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and production operations on the Alaskan North Slope. Supported negotiations with several insurance carriers regarding the settlement of historic insurance policies.

Insurance Settlement Project, Multinational Chemical Company. Engineer for a project to quantify the overall potential environmental liability relative to historic insurance coverage at a subset of the client's portfolio of active and previous chemical manufacturing facilities located in the U.S., Europe, and Latin America. Required analysis of international environmental law and regulations applicability to insurance coverage.

Environmental Cost Estimating Litigation, Redevelopment Site, Law Firm, Washington, D.C. Project Manager to support counsel for plaintiffs in contesting the validity and technical defensibility of an environmental remediation cost estimate conducted for a group of properties in an urban industrial area. Project involved the review of relevant documents and preparation of an expert report.

PRP Cleanup Cost Allocation, Municipal Landfill, Law Firm, Northern New Jersey. Staff Engineer to support counsel for a PRP sub-group at a municipal landfill where hazardous waste was dumped illegally by a former waste hauler. Prepared a report recommending a strategy for allocation of investigation and remediation costs amongst the entire PRP group based on the nature and extent of contamination at the site and historic waste disposal records.

RCRA Site Remediation Litigation Support, Casting Facility, Law Firm, New York. Staff Engineer to support counsel for former owner of a die casting facility in supporting position that chlorinated solvent contamination at the site did not originate from their client's tenure of operation at the site. Evaluated nature and extent of contamination, historical data from degreasing operation, and ongoing investigation and remediation of the site to assess the past owner's potential culpability for the site remediation costs. Worked with counsel to prepare litigation strategy, expert reports, and witness testimony.

Water Supply System Evaluation, Municipal Water District, Northern New Jersey. Staff Engineer on behalf of a municipal water district to evaluate the possibility of a caustic release at a water treatment plant flowing to a specific drinking water fountain at which a resident allegedly was injured from drinking high-pH water.

CERCLA Litigation at Industrial Site, Adhesives Manufacturing Plant, Law Firm, Albany, New York. Staff Engineer to support counsel for the former owners of an adhesive manufacturing facility in defending against demand by current site owner for full reimbursement of past and future environmental investigation and remediation costs stemming from non-halogenated solvent contamination in soil and groundwater. Support included conceptual modeling of the fate and transport of contaminants in the groundwater from multiple process sources, analyzing natural attenuation factors (biodegradation, dissolution, and volatilization), and evaluating the conceptual design of a remediation system for the site incorporating groundwater pump and treat and soil vapor extraction. Worked with counsel to prepare litigation strategy, expert reports, and witness testimony.

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Environmental Reserve Procedure Review, Confidential Industrial Client, Southeast U.S. Retained to review the company's environmental cost estimating and reporting procedures relative to other industrial players and to present related industry experience in a training/moderated discussion with the company's financial, legal, and environmental management.

Pre-acquisition Environmental Due Diligence, Confidential Private Equity Client. Engaged through outside counsel to assess potential environmental liabilities associated with at portfolio of more than 120 sites in 20 countries. This preliminary assessment consisted of coordination of a global team to conduct a data room review of existing documents provided by the seller and preparing a report identifying significant issues to be considered in preparing a qualifying bid.

Environmental Reserve Review, Confidential Multinational Client. Technical advisor on project to evaluate the appropriateness of environmental reserves for a portfolio of more than 30 sites in the Americas, Europe, and Asia. Developed phased systematic approach to consistently evaluate each site in consideration of ASC 450 Contingencies financial reporting requirements.

Fair Value Evaluation, Nationwide Waste Services Client. Senior Advisor on project involving developing estimate of fair value of environmental remediation liabilities for a portfolio of more than 40 waste management and third-party sites involved in a corporate merger. Worked with client technical, legal, and accounting personnel to develop costing methodology to satisfy client internal reporting requirements, financial reporting requirements of FAS 141-R (ASC 805) and FAS 157 (ASC 820), and standards of practice in environmental cost estimating, including ASTM E2137/2173.

Buyer Due Diligence, Confidential Multinational Client. Project Director for project involving desktop studies, Phase I, and Phase II environmental site assessments in support of a potential acquisition of 15 US sites.

Vendor Due Diligence, Confidential Multinational Food Products Client. Project Director for Phase II site investigation in support of potential sale of production facility in New England.

Proposed Intermodal Facility, Baltimore, MD. Project Director for project in support of potential acquisition of several properties. Supported client in Phase II site investigations and evaluation of environmental data, environmental liability valuation, and negotiations with Maryland Department of Transportation.

Railroad Infrastructure Project, Washington, DC. Project Director for project to scope and obtain information about potential environmental constituents that may be encountered during a large railroad infrastructure project.

Permitting Support for Coal Stockpile Expansion, Baltimore, Maryland. Supported client's expansion of coal stockpile at a marine terminal within the Chesapeake Bay Critical Area. Negotiated fee-in-lieu of afforestation requirement, designed and obtained approval for erosion

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and sedimentation controls for the project, and coordinated with Client, State, and City technical and legal representatives to obtain final approvals for work.

Property Redevelopment, Former Rail Yard, Crescent Resources, Arlington, Virginia. Project Manager for comprehensive environmental support during infrastructure construction and due diligence investigations by potential buyers including: evaluation of potential management alternatives for more than 100,000 cubic yards of cinder ballast material (containing elevated concentrations of arsenic and other metals) and other residual wastes such as railroad ties and petroleum impacted soil; assisting in procuring waste disposal services for these waste streams; acting as client's representative, overseeing all field investigation and sampling activities and providing independent reports on the results of these investigations during buyers' environmental due diligence activities; and providing environmental inspection oversight during an excavation of more than 100,000 cubic yards for two new office buildings to assure compliance with the Soil Management Plan.

Buyer Environmental Due Diligence, Soda Ash Manufacturing Facilities, Confidential Client, France. Staff Engineer for the completion of a buyer's environmental due diligence investigation of manufacturing facilities consisting of a limestone quarry, brine solution mining operation, and manufacturing plant. Focused on plant chloride wastewater treatment process and waste minimization practices in relation to pending international environmental regulations limiting downstream chloride content.

Property Purchase Due Diligence, Food Services Packaging Facility, Maryland. Project Manager on project involving completion of Phase I ESA consistent with ASTM 1527-06, as well as vapor intrusion assessment per ASTM E2600-08 and visual asbestos screening.

Due Diligence for Potential Cell Tower Sites, Confidential Telecommunications Company, Mississippi. Project Engineer to conduct site inspections and prepare Phase I environmental site assessments for six proposed cellular transmitter tower sites located on the Gulf Coast of Mississippi.

Closure Cost Evaluation for Hazardous Waste Landfill, Hazardous Waste Landfill, Confidential Client, Idaho. Engineer for an independent engineering estimate of RCRA closure/post-closure costs for a hazardous waste landfill on behalf of client intending to purchase the site. Independent estimate used in negotiating sale price and environmental indemnity language in sales agreement.

Environmental Cost Cap Insurance Evaluation, Confidential Petroleum Company, Various States. Project Manager for project for an environmental insurance broker to evaluate and estimate the future cost of potential remedial scenarios at the client's portfolio of refineries and bulk fuel terminals. Results were used to support underwriting of remediation cost cap and third-party pollution damage policies.

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Commercial Property Phase I Environmental Site Assessments, Various Commercial Properties, Chemical Bank, New York. Staff Engineer for Phase I Environmental Site Assessments for commercial properties being considered for financing.

Phase I Environmental Site Assessment for Electronics Manufacturing Facility, Law Firm, Long Island, NY. Staff Engineer for a Phase I Environmental Site Assessment of a former electronics manufacturing facility, and supported buyer in sales negotiations.

Multimedia Compliance Audit, Electronic Parts Manufacturing Plant, Confidential Client, Long Island, New York. Staff Engineer for internal audits of all facility operations, including metal machining, parts washing, electroplating, and extrusion molding, relative to applicable chemical storage, hazardous waste management, wastewater treatment, storm water management, air emissions, and environmental health & safety regulations.

Multimedia Compliance Audit, Rucco Polymer, Long Island, New York. Staff Engineer for research and engineering support during multimedia compliance audit for potential buyer.

Confined Space Air Monitoring, Confidential Contractor, Brooklyn, New York. Staff Engineer, provided air monitoring during contractors confined space entry to complete improvements to combined sewer outfall.

OSHA Environmental Health and Safety Program, Municipal Government, Long Island, New York. Project Manager for the development of a program for municipal employees working at the site landfill or otherwise involved with managing hazardous materials. Integrated Hazwoper, hazard communication (Hazcom), permit-required confined space entry, and bloodborne pathogen programs. Conducted Hazcom and Hazwoper (8-hour and 40-hour) training for municipal employees.

Corporate Health and Safety Planning, Emergency Response Contractor, Long Island, New York. Staff Engineer to develop comprehensive Health and Safety Program for an emergency response contractor to assist their compliance with OSHA Hazwoper requirements.

Health and Safety Planning for Landfill Closure, Confidential Client, Several Landfill Sites, New York. Staff Engineer for the development of site-specific health and safety plans and perimeter air monitoring plans for contractors engaged in closing several municipal landfills.

Remediation/Process Engineering Design

Voluntary Cleanup at Former Wood Treating Site, Confidential Railroad Client, Maryland. Project Manager for investigation/remediation project to address petroleum hydrocarbons, SVOCs, and metals (including arsenic and lead) in soil and groundwater at a former railroad tie manufacturing site. Project conducted under the Maryland Voluntary Cleanup Program. Engaged in public participation and regulatory negotiations. Also coordinated work by third party that constructed storm water drainage structure at the site, including review of engineering design, erosion and sedimentation controls, and excavated soil management.

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Chlorinated Solvent Groundwater Plume, Naval Air Station North Island, U.S. Navy, Coronado, California. Project manager for the evaluation, design, and implementation of enhanced in situ bioremediation (EISB) removal action incorporating biostimulation and bioaugmentation to address groundwater containing elevated concentrations of chlorinated solvents (primarily cis-1,2-dichloroethene and vinyl chloride). Project has involved planning and conducting a removal site evaluation and biotreatability study to assess the feasibility of an EISB remedy and to establish design criteria. Project also will involve the design, installation, start-up, and operation of a pilot-scale and full-scale EISB systems to address the contaminated plume.

EISB System Design, Manufacturing Plant, Confidential Client, Odense, Denmark. Senior Engineer for engineering design calculations for EISB system incorporating biostimulation and bioaugmentation to address groundwater containing elevated concentrations of chlorinated solvents and hexavalent chromium.

Acidic Groundwater Treatment Feasibility Study, Municipal Solid Waste Landfill, Waste Management, Inc., Eastern Maryland. Project Manager for a focused study to evaluate the feasibility of employing various passive and active treatment technologies to address an acidic and metal-containing groundwater discharge to surface water.

Groundwater Remedial Action, Former Industrial and Municipal Landfill Site, Confidential Client, Northern New Jersey. Project Manager for the negotiation and implementation of a monitored natural attenuation (MNA) and focused EISB remedy to address contaminated groundwater and surface water in accordance with a NJDEP Administrative Consent Order (ACO) and Classification Exception Area (CEA); MNA remedy incorporated semiannual MNA monitoring and reporting to evaluate ongoing attenuation of site contaminants (VOCs, SVOCs, and metals) present in groundwater and surface water; project also involved the pilot testing and full-scale design, installation, start-up, and monitoring of an EISB system incorporating biosparging via the pulsed injection of compressed air to the aquifer; also was responsible for the inspection and maintenance of a large (>100 wells) groundwater monitoring network and decommissioning of numerous wells in accordance with NJDEP approved plan.

Mine Drainage Treatment Cost Estimating Guidance Document, U.S. Office of Surface Mining. Engineer providing technical support to the U.S. Office of Surface Mining in the preparation of a guidance document, titled Methodology for Estimating the Costs of Treatment of Mine Drainage. Specifically, focused on developing a network of cost estimating spreadsheets that can be used to calculate costs for active and passive technologies used for treating acidic and metal-containing drainage from active and historic mining operations.

Air Permitting for Electroplating Process, Photocircuits, Glen Cove, New York. Staff Engineer for the development of methodology for calculating air emissions from various electroplating processes to support NYSDEC air permitting requirements.

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Remediation System Upgrade, JFK Airport Bulk Storage Facility, Ogden Aviation Services, Brooklyn, New York. Project Manager to evaluate and upgrade the recovery and treatment system to address gross free-phase and dissolved petroleum hydrocarbon contamination. Determined that equipment upgrade was not necessary and returned system to effective operation by rehabilitating iron-fouled wells.

Process Improvements, Abrasives Manufacturing Plant, Confidential Client, Niagara Falls, New York. Staff Engineer to design an equalization/neutralization pretreatment system, a new wastewater pump station and force main, a closed-loop hot water system, and conducted a wastewater (containing phenolic compounds and metals) minimization study.

Lead Minimization Study, Municipal Water District, Mineola, New York. Staff Engineer to evaluate the effectiveness of various strategies to reduce lead concentrations in drinking water.

Cross Connection Evaluation, Photochemical Manufacturing Facility, Confidential Client, Central New York. Staff Engineer to evaluate historic site plans for identification of potential cross connections of sanitary or industrial sewer lines to the storm water system.

1,4-Dioxane White Paper, U.S. EPA Technology Innovation Office. Project Manager, prepared white paper about 1,4-dioxane characterization and treatability issues to be used to brief EPA staff.

Report about the Fundamentals of In Situ Thermal Treatment of Chlorinated Solvents, U.S. EPA Technology Innovation Office. Project Manager, prepared report about the technical basis for and experience at sites using steam enhanced extraction, electrical resistive heating, and thermal conductive heating technologies to address DNAPL source zones.

Remediation Technology Cost Compendium, U.S. EPA Technology Innovation Office. Project Manager for a project to analyze and report cost data from applications of various remedial technologies including bioremediation, thermal desorption, soil vapor extraction, groundwater pump and treat, permeable reactive barriers, and incineration.

Technical Reports and Cost Analyses for Remediation of MTBE and Other Fuel Oxygenates, U.S. EPA Technology Innovation Office. Project Manager for multiple work assignments under contract to EPA's Technology Innovation Office to prepare a comprehensive report on the fundamentals and field application of remediation technologies used to treat MTBE and other fuel oxygenates and to develop a database of related treatment projects. Authored journal articles and conference presentations related to the cost and performance of these technologies.

Assembled Chemical Waste Treatment Technology Assessment, U.S. EPA Technology Innovation Office. Engineer to evaluate the possibility of using several innovative remedial technologies, originally designed for treating chemical weapons, for treating various hazardous wastes. Technologies included, plasma arc, super-critical water oxidation, gas-phase chemical reduction, fixed-media bioremediation, and electrochemical oxidation technologies. Analyzed

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science behind each technology to determine its applicability in treating PCBs, chlorinated pesticides, dioxins, and other difficult to treat hazardous chemicals.

Environmental Site Investigation

Virginia Avenue Tunnel, CSX Transportation, Washington, D.C. Coordinated Geosyntec team to support investigation in the context of the Environmental Impact Statement for this project and in environmental management of excess materials generated during construction.

Brownfield Development, CSX Transportation, Baltimore, MD. Led Geosyntec project team engaged in conducting Phase II environmental site investigation, environmental liability valuation assessment, and regulatory negotiations with the MDE in the context of the MDE Controlled Hazardous Substances framework. Obtained pre-no further action determination from MDE for the site prior to potential property transaction.

Voluntary Cleanup Program, CSX Transportation, Baltimore, MD. Environmental consultant to CSXT in ongoing joint investigation and potential remediation by CSXT and MTA related to a site in Baltimore.

Site Investigation and Remediation at Former Industrial Facility, Connecticut. Project manager for investigation/remediation of former office equipment manufacturing facility dating back to 1880s under CTDEP consent order. Project involved addressing former on-site industrial waste management units, chlorinated solvent impacts to groundwater, impacts from storage tanks.

RCRA Corrective Action/Closure, Former Rocket Manufacturing Facility, Virginia. Senior Engineer and local Project Manager on project involving completion of RCRA Facility Investigation, Interim Remedial Measures for soil and groundwater, closure of RCRA hazardous waste treatment unit, and overall permitting/compliance activities on 400-acre leased property. Site exhibited VOC and perchlorate contamination in soil and both shallow and fractured bedrock groundwater as well as suspected unexploded ordnance. Involved in negotiations with USEPA Region 3 RPM and VDEQ leads, and in overall facility decommissioning strategy associated with turnover of site to owner.

Rail Yard Subsurface Investigations, Rail Yard Properties, CSX Transportation, Various Sites, West Virginia. Staff Engineer for engineering and project management support for the investigation and remediation of environmental conditions at several rail yard properties. Developed sampling plans for soil and groundwater, analyzed and reported the results of environmental testing, designed groundwater remediation systems, and oversight of excavation of contaminated soil.

Groundwater Corrective Action, LaGuardia Airport Bulk Storage Facility, Ogden Aviation Services, New York, New York. Project Manager for state-mandated corrective action for free-phase petroleum hydrocarbon contamination. Included investigating site groundwater, conducting fingerprinting analysis to determine the source of contamination in different portions

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of the site, designing upgrades to site storm water collection and treatment system, re-designing concrete slab system with spill containment, and interim measures to recover free phase contamination.

Residential Oil Tank Investigation, Private Homeowner, Westchester, New York. Staff Engineer for field sampling and oversight during removal of leaking residential underground storage tank. Oil contaminated soil had soaked through the home foundation and into the home's septic leach field. Provided oversight and confirmation sampling during soil excavation and support during regulatory negotiations.

Groundwater Sampling, Confidential Client, New Jersey. Staff Engineer for low-flow groundwater sampling to satisfy periodic monitoring requirements at two former waste sites contaminated with chlorinated solvents and metals.

PROFESSIONAL EXPERIENCE

Geosyntec Consultants, Washington, D.C. and Columbia, Maryland, 2003-present

Tetra Tech EM Inc., Reston, Virginia, 1998-2003

Cornell University, Department of Civil and Environmental Engineering, Ithaca, New York,
Teaching Assistant, 1997-1998

Eder Associates, Locust Valley, New York, 1993-1997

AFFILIATIONS

Member, American Institute of Chemical Engineers, Environmental Section

Member, Association of Hazardous Material Managers

Member, Association for the Advancement of Cost Engineering International

PUBLICATIONS

- 14-12 **Berman, M.**, 2014, "Discounted Cash Flow in Environmental Cost Estimating: What Is the Right Approach?", ABA Section of Environment, Energy, and Resources, Environmental Disclosure Committee Newsletter, 12:1, December 2014.
- 14-01 Gaffigan, B. and **Berman, M.**, 2014, "Integrated Environmental and Financial Sustainability Reporting", National Association of Environmental Managers Newsletter, January 2014.
- 12-01 **Berman, M.**, 2012, "Battle-Tested Environmental Liability Valuation Defensible Cost Estimates for Decision Makers", Technical Roundtable Presentation at the ABA Section of Environment, October 2012.

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- 12-02 **Berman, M.** and Brookner, P., 2012, “Defensible Cost Estimating Fundamentals In The Context Of Environmental Disclosure”, ABA Section of Environment, Energy, and Resources, Environmental Disclosure Committee Newsletter, 10:1, December 2012.
- 07-01 Ballentine, G., **M. Berman**, 2007, “Achieving Consistent Liability Estimates: Financial Reporting to Performance-Based Contracting,” Presentation at Joint Services Environmental Management Conference, Columbus, Ohio, May 21-24, 2007.
- 07-02 Hansen, M., K. Philpy, **M. Berman**, M. DeFlaun, M. Wilson, L. Hamilton, 2007, “Pilot Testing a New Technology for Passive Diffusion Sampling,” Platform presentation at Ninth International Symposium on In Situ and On-Site Bioremediation, Baltimore, Maryland, May 7-10, 2007.
- 07-30 Houlihan, M.F. and **M. H. Berman**, 2007, Chapter 36: Remediation of Contaminated Groundwater in the Handbook of Groundwater Engineering, 2nd Edition, J.W. Delleur, ed., CRC Press, Boca Raton, FL.
- 07-04 Krasnopoler, A., M., K. Philpy, M. Hansen, **M. Berman**, N. Durant, L. Hamilton, 2007, “Performance Evaluation of a Full-Scale Biosparging Barrier,” Platform presentation at Ninth International Symposium on In Situ and On-Site Bioremediation, Baltimore, Maryland, May 7-10, 2007.
- 05-01 Durant, N., **M. Berman**, C. Elder, D. Larson, E. Cox, M. Piazza, 2005, “Design and Pilot Testing of a Biosparging Barrier,” Poster presentation at Eighth International Symposium on In Situ and On-Site Bioremediation, Baltimore, Maryland, June 6-9, 2005.
- 04-01 U.S. EPA, 2004, “In Situ Thermal Treatment of Chlorinated Solvents: Fundamentals and Field Applications,” Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation. EPA-542-R-04-010.
<http://www.clu-in.org/download/remed/epa542r04010.pdf>
- 03-01 Fiedler, L. and **M. Berman**, 2003, “Cost of In situ Treatment of Fuel Oxygenates,” Presented at NGWA Conference on Remediation: Site Closure and the Total Cost of Clean-up, November 14, 2003.
- 03-02 U.S. EPA, 2003, “Technologies for Treating MTBE and other Fuel Oxygenates,” Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation. <http://www.clu-in.org/download/remed/542r04009/542r04009.pdf>
- 01-01 U.S. EPA, 2001, “Remediation Technology Cost Compendium — Year 2000,” Office of Solid Waste and Emergency Response, Technology Innovation Office, EPA 542-R-01-009. <http://clu-in.org/download/remed/542r01009.pdf>

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- 00-01 U.S. EPA, 2000, "Engineered Approaches to In Situ Bioremediation of Chlorinated Solvents: Fundamentals and Field Applications," Office of Solid Waste and Emergency Response, Technology Innovation Office, EPA 542-R-00-008. <http://www.epa.gov/tio/download/remed/engappinsitbio.pdf>
- 99-01 U.S. EPA, 1999, "Groundwater Cleanup: Overview of Operating Experience at 28 Sites," Office of Solid Waste and Emergency Response, Technology Innovation Office, EPA 542-R-99-006. <http://clu.in.org/download/remed/ovopex.pdf>
- 98-01 **Berman, M.**, M. Darrow, C. DeMai, T. Grettarson, P. Karakelian, T. Krantz, R. Martel, 1998, "Remedial Alternatives for Radioactive Disposal Facility," Cornell University, New York, Department of Civil and Environmental Engineering, Master of Engineering Project.

ATTACHMENT 2

Information Sources

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Ace Boring, Inc., 1989. Boring Inspection Figure, 17 December 1999. [Jalayer 1932]

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American Society for Testing and Materials (ASTM), 2000. “Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process”

ASTM, 2003. “Standard Guide for Design and Construction of Coash Ash Structural Fills”

Applemon Corporation, 2010. Invoice, 1 August 2006. [Jalayer 608]

Applemon Corporation, 2010. Invoice, 2 July 2010. [Jalayer 607]

Applemon Corporation, 2010. Re: Site Inspection and Soil Sampling, 30 June 2010. [Jalayer 1574]

Applemon Corporation, 2006. Subject: Jalayer Property (Electronic Correspondence), 5 July 2006. [Jalayer 613]

Applemon Corporation, 2009. Re: Material Sampling, 5 February 2009. [Jalayer 618-Jalayer 619; Jalayer 1575-Jalayer 1576]

Applemon Corporation, 2009. Re: Soil Sampling: Applemon Proposal No. 09-124, 16 March 2009. [Jalayer 615-Jalayer 616]

Applemon Corporation, 2006. Re: Environmental Subsurface Investigation: Applemon Proposal No. 06-132, 17 May 2006. [Jalayer 611]

Applemon Corporation, 2006. Re: Soil Sampling and Environmental Consultation for Jalayer Property: Applemon Proposal No. 06-127, 25 April 2006. [Jalayer 609-Jalayer 610]

Applemon Corporation, 2006. Subject: Sea Cliff Property (Electronic Correspondence), 18 April 2006. [Jalayer 612]

Applemon Corporation, 2006. Subject: Material Staging/Stockpiling Area, 23 June 2006. [Jalayer 617]

Applemon Corporation, 2006. Untitled (Electronic Correspondence), 25 April 2006. [Jalayer 614]

Application for Public Access to Environmental Health Records Nassau County Department of Health, 24 April 2008.

- Barbiere, J., 1976. Re: Premises at 34 Wood Ridge Lane, 15 April 1976. [Jalayer 420]
- Barbiere, J., 1976. Re: Filling of Property at 34 Wood Ridge Lane Sea Cliff, N.Y., 29 July 1976. [Jalayer 421]
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Pub. L No. 96-510, 94 Stat. 2767 (1980).
- Cornerstone Environmental Group, LLC (Cornerstone), 2014. Alternative Analysis Report, June 2014.
- Cornerstone, 2013. Final Remedial Investigation Report, 6 December 2013.
- Cornerstone, 2011. Remedial Investigation Work Plan, May 2011.
- Dermody, P., 2018. Expert Report, April 2018.
- Dru Associates, Inc., 2004. Phase I: Environmental Site Assessment, 23 February 2004. [Jalayer 518-Jalayer 545]
- Dru Associates, Inc., 2004. Phase I: Environmental Site Assessment, 24 March 2004. [Jalayer 575-Jalayer 599; Jalayer 1527-Jalayer 1551]
- Dru Associates, Inc., 2004. Phase I: Environmental Site Assessment, 14 April 2004. [Jalayer 546-Jalayer 574]
- Electric Power Research Institute (EPRI), 1979. Fly Ash Structural Fill Handbook, prepared by GAI Consultants, Inc. on contract to EPRI, report EA-1281, Research Project 1156-1; December 1979.
- Federal Register Vol. 70 66107, Nov. 1, 2005.
- First Long Island Title Agency, Inc., 2002. Deposit and Escrow Agreement, 7 November 2002. [Jalayer 1915]
- Forchelli, Curto, Schwartz, Mineo, Carlino & Cohn, LLP, 2005. Re: Bryant Avenue, Sea Cliff, 1 April 2005. [Jalayer 669]
- Forchelli, Curto, Schwartz, Mineo, Carlino & Cohn, LLP, 2005. Re: Bryant Avenue, Sea Cliff, 8 April 2005. [Jalayer 668]
- Gold Coast Gazette, 2006. Volume XIV Number 29 Hometown Newspaper for Glen Cove, Sea Cliff, Glen Head, Glenwood and Brookville, 29 March 2006. [Jalayer 659-Jalayer 660]
- Incorporated Village of Sea Cliff, 2005. Board of Architectural Review, 18 April 2005. [Jalayer 655-Jalayer 656; Jalayer 661-Jalayer 662]
- Incorporated Village of Sea Cliff, 1995. File Notice, 1 February 1995. [Jalayer 426]

Incorporated Village of Sea Cliff, 2005. Informal Design Meeting for Five New Houses, 13 April 2005. [Jalayer 658; Jalayer 664]

Incorporated Village of Sea Cliff, 1987. Notice of Violation, 23 October 1987. [Jalayer 423-Jalayer 424]

Incorporated Village of Sea Cliff, 2006. Notice of Violation, 10 March 2006. [Jalayer 647]

Incorporated Village of Sea Cliff, 2006. Notice of Violation, 14 March 2006. [Jalayer 646]

Incorporated Village of Sea Cliff, 2007. Notice of Violation, 9 October 2007. [Jalayer 645]

Incorporated Village of Sea Cliff, Undated. Public Hearing Notice. [Jalayer 665]

Incorporated Village of Sea Cliff, 2001. Re: Denial of Application for Building Permit, 18 January 2001. [CSG Stigliano 91]

Incorporated Village of Sea Cliff, 2002. Re: Sec 21 Blk L Lots 38, 72, 81 34 Woodridge Lane, 23 October 2002. [Jalayer 654]

Incorporated Village of Sea Cliff, 2003. Re: Sec 21 Blk L Lots 38, 72, 81 34 Woodridge Lane, 24 February 2003. [Jalayer 649-Jalayer 650]

Incorporated Village of Sea Cliff, 2005. Re: Sec 21 Blk L Lot 38, Revised Plans for New House, 3 May 2005. [Jalayer 657; Jalayer 663]

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Incorporated Village of Sea Cliff, 2003. Short-Form Decision, 30 September 2003. [Jalayer 666-667]

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Koch, K., 2006. Deposition of Saeid E. Jalayer, 25 April 2011.

Long Island Analytical Laboratories Inc., 2010. Laboratory Analytical Report, 29 September 2010 [Jalayer 1552-Jalayer 1555]

Nagy, J., 2005. Field Inspection Report, 12 March 2005. [Jalayer 671]

Nagy, J., 2005. Field Inspection Report, 1 May 2004. [Jalayer 651-Jalayer 652]

- Nagy, J., 2004. Preliminary Subdivision Plat – Jalayer and Ataiceek, 1 May 2004. [Jalayer 672-Jalayer 677]
- Nassau County Clerk's Office, 2005. Liber Book D 11936 Pages 372-393, 7 April 2005. [Jalayer 1895-Jalayer 1910]
- Nassau County Clerk's Office, 2004. Liber Book D 11790 Pages 782-785, 4 June 2004. [Jalayer 1891-Jalayer 1894]
- New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER), Region One, 2014. Re: Prospect Ave & Bryant Ave Site: Alternative Analysis Report, 25 July 2014.
- NYSDEC DER, 2010. Technical Guidance for Site Investigation and Remediation, 3 May 2010.
- NYSDEC Division of Materials Management, Bureau of Waste Reduction & Recycling, Undated. Granted Beneficial Use Determinations Sorted by Waste Type.
- Office of The Building Inspector Incorporated Village of Sea Cliff, 2006. Building Permit Inspection Report, 10 March 2006. [Jalayer 648]
- Oswald, H., 1975. Re: North Shore Cesspool Cleaning Co. Filling of property at 34 Wood Ridge Lane, Sea Cliff, 6 August 1975. [Jalayer 417-Jalayer 418]
- Oswald, H., 1975. Re: North Shore Cesspool Cleaning Co. Filling of property at 34 Wood Ridge Lane, Sea Cliff, 31 July 1975. [Jalayer 419]
- Parker, Duryee, Benjamin, Zunino & Malone, 1954. Cover Letter to Warranty Deed, 1 April 1954. [CSG Stigliano 144]
- Residential Contract of Sale, 29 August 2002. [Jalayer 1911-Jalayer 1914; Jalayer 1916-Jalayer 1919]
- Rich, C., 2018. FRCP 26 Expert Report, 6 April 2018.
- Rider to Contract of Sale, 29 August 2002. [Jalayer 1920-Jalayer 1930]
- The Small Business Liability Relief and Brownfields Revitalization Act, Pub. L No. 107-118, 115 Stat. 2356 (2002).
- Soil Mechanics Drilling Corp, 2006. Invoice #06-239TS, 27 March 2006. [Jalayer 686 – Jalayer 687]
- Soil Mechanics Drilling Corp, 2006. Letter of Transmittal: Field Report, Sieve Analysis, and Billing, 27 March 2006. [Jalayer 688 – Jalayer 692]
- Soil Mechanics Environmental Services, 2006. Re: Prospect Avenue, Sea Cliff, N.Y., SMES # 06-284, 18 April 2006. [Jalayer 684-Jalayer 685; Jalayer 1556-Jalayer 1568]

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United States Environmental Protection Agency (USEPA), et al, 2005. Using Coal Ash in Highway Construction: A Guide to Benefits and Impacts, April 2005.

US EPA Office of Solid Waste and Emergency Response, 1999. Presumptive Remedy for Metals-in-Soil Sites, September 1999.

US EPA Office of Solid Waste and Emergency Response, 1997. Rules of Thumb for Superfund Remedy Selection, August 1997.

US EPA, 1999. Risk Assessment Guidance for Superfund (RAGS), EPA/540/1-89/002, December 1999.

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York Analytical Laboratories, Inc., 2006. Technical Report, 2 May 2006. [Jalayer 620-Jalayer 624; Jalayer 1569-Jalayer 1573; Jalayer 1577-Jalayer 1586]